

UNIT-5:NATIONAL INCOME AND RELATED AGGREGATES

Basic concepts:

GOODS

Final goods:

Meaning:

Those goods which are meant for final use and will not pass through any more stages of production or transformation are called final goods.

Features:

- Meant for final consumption or investment
- It will not undergo any further transformation at the hand of any producer
- Once it has been sold it passes out of the active economic flow
- These are not meant for resale
- If any good meant for intermediate but does not used in the same year and remain for another year , it qualifies for final good
- It does not make any Value Addition
- Example: Milk purchased by house hold , Tea Brewing Machine purchased by the restaurant

Implications:

- ✓ Value of the final goods are included in the Domestic as well as National Income

Intermediate goods:

Meaning:

Those goods which are meant for resale or further production and will pass through more stages of production or transformation are called intermediate goods.

Features:

- Meant for resale or further production
- It will undergo further transformation at the hand of any producer
- It remain within the active economic flow
- Mostly used as raw materials or inputs (Non factor inputs) for production of other commodities
- If any good meant for intermediate it should be used up in the same year to qualify for intermediate good
- It makes Value Addition
- Example: Milk purchased by a restaurant for preparing tea , Tea Brewing Machine purchased by the machine dealer for resale

Implications:

- ✓ Value of the intermediate goods are not included in the Domestic as well as National Income

Note:The same good may be final good or intermediate good , it depends on the nature of its economic use. Hence it is not the nature of the good rather its nature of economic use which makes it final good or intermediate good.

Types of final goods:

Final goods are divided in to two types.

- (a) Consumption Goods
- (b) Capital Goods

Consumption Goods

Those goods which are consumed when purchased by their ultimate consumers are called consumer goods.

Example: Milk, bread , food etc.

Capital Goods

Those goods which are durable in nature and used in the production process to make production of other goods feasible , but they themselves do not get transformed in the production process.

Example: Machines, Tools and implements

Note: All goods used by the producer (Produce Goods) are not capital goods , but all capital goods are Producer goods.

STOCKS AND FLOWS

Stocks:

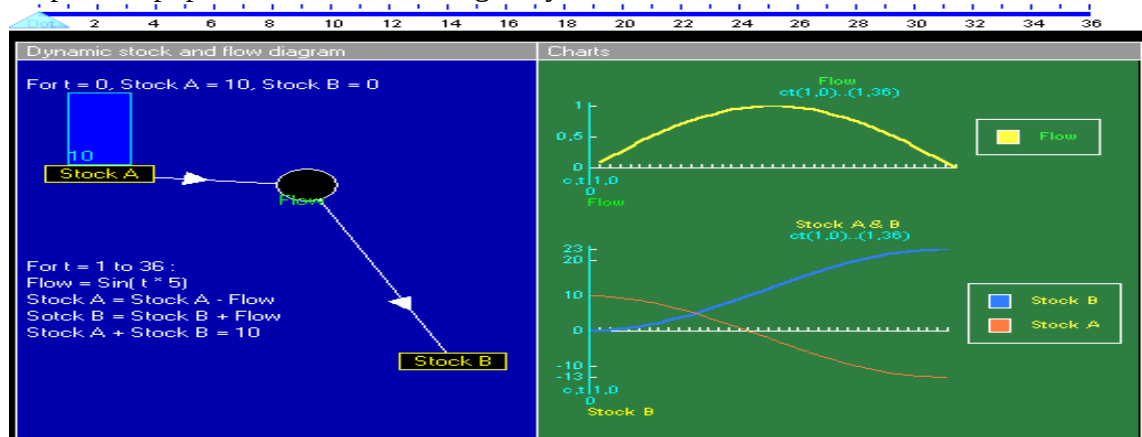
Meaning: Those variables which are measured at a point of time are called stock variables

Example: The population of India as on 31st March 2017

Flows:

Meaning : Those variables which are measured over a period of time are called flow variables

Example: the population of India during the year 2017



Difference between stock and flow variable

Basis	Stock variable	Flow variable
Meaning	Those variable which are measured at a point of time	Those variables which are measured over a period of time
Nature	Static	Dynamic
Time dimension	It does not have any time dimension	It has time dimension
Example	Capital , National wealth	Capital formation , National wealth , savings

Investment:

Investment refers to the addition to the stock of capital. It is also called capital formation.

Gross Investment

It is the total addition to the capital stock of the economy including depreciation

Note:

- A significant part of the current output of capital goods goes in maintaining or replacing part of the existing stock of capital goods
 - This is because the existing capital stock suffers wear and tear and needs maintenance and replacement
 - A part of the capital goods produced in the current year goes for replacement of existing capital goods and is not an addition to the stock of capital goods already existing and its value needs to be subtracted from gross investment for arriving at the measure for net investment
- ✓ This replacement investment is called DEPRECIATION.

Depreciation:

It refers to the annual allowance for normal wear and tear of a capital good

- It is calculated annually
- It is pre-determined. Hence it is always positive
- It is calculated by:

$$\text{Depreciation} = \frac{\text{Value of the fixed asset}}{\text{Expected Life in years}}$$

- The other names are Consumption of Fixed Capital, Replacement Investment, Capital Consumption Allowances etc.

Net Investment:

It is the addition to capital stock in an economy during a year excluding depreciation.

Net Investment = Gross Investment – Depreciation

Example:

Suppose a company has 5 machines and 20% of each machine is depreciated annually. This year the company has purchased another 3 machines. So the Gross Investment is 3 machines. But actually 1 machine is meant for replacing the existing machines. Hence net investment is 2 machines.

CIRCULAR FLOW OF INCOME IN TWO SECTOR ECONOMY

Meaning:

A pictorial illustration of the flow of income and product among various sectors of the economy is called Circular Flow of Income.

Assumption:

- There are only two sector in the economy , namely Household and Firm
- Household is the sole consumer and Firm is the sole producer in the economy
- There are no leakages and injections in the economy

Basic principles:

- In any exchange process the seller or producer receives the same amount that the buyer or consumer spends
- Goods and services flow in in direction (Real Flow) and money payment to acquire these flow in the return direction, thereby causing a circular flow.

Explanation:

This can be explained by the help of the following diagram

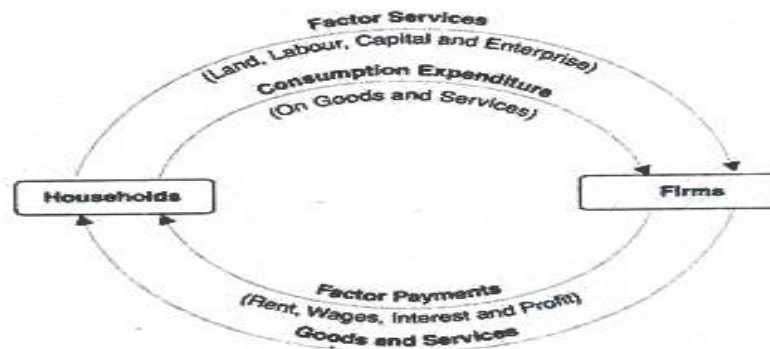


Fig. 1.4

In the upper loop of the diagram

- Households provide factor services like land , labour , capital and enterprise to the firms
- By using these the firm produce goods and service and provides to the households

In the lower loop of the diagram

- The firms make payment for the factor service to the households in the form of rent , wage , interest and profits
- Households make payment to the firm in the form of consumption expenditure

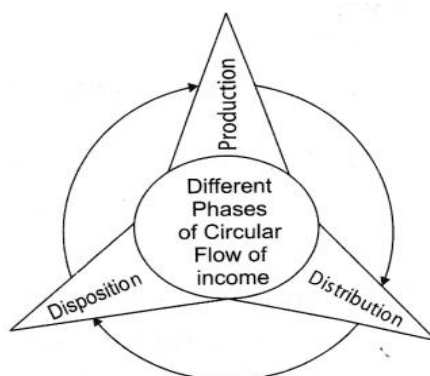
In this case the flow of goods and services and factor services are called real flow and money payments and expenditure are called Money flow.

Money Flow = Real Flow

PHASES OF CIRCULAR FLOW

There are three phases of circular flow

- **Generation:** Production of goods and services by the firms
- **Distribution :** Flow of factor income from firms to households
- **Disposition:** Consumption expenditure by household on the goods and services produced by firms



ECONOMIC TERRITORY:

Meaning:

It refers to the geographical territory administered by a government within which persons , goods and capital circulate freely

Scope:

It includes

- Political frontiers including territorial waters and air space
- Embassies , consulates , military bases etc located abroad
- Ships , aircrafts etc operated by the residents between two or more countries
- Fishing vessels , oil and natural gas rigs etc operated by the residents in the international waters of other areas over which the country enjoys the exclusive rights or jurisdiction

It does not include:

- Embassies , consulates , military bases etc of other countries located within the political frontiers
- International organizations like UNO , WHO , UNESCO etc located within the geographical boundary of a country

Implications:

Income earned within the economic territory of a country is a part of the domestic income of the country

NORMAL RESIDENT

Meaning:

It refers to a person or an institution whose centre of economic interest lies in the economic territory of the county in which he lives.

Note: Centre of economic interest implies two things

- The resident lives or is located within the economic territory
- The resident carries out basic economic activities of earnings , spending and accumulation from that location

Scope:

It does not include

- Foreign tourists and visitors
- Foreign staff of embassy , diplomats etc
- Employees of international organizations

Implications:

Income earned by the Normal residents of a country is a part of its National Income

MEASUREMENT OF NATIONAL INCOME**Basic Adjustments**

$$\text{Domestic} + \text{NFIA} = \text{National}$$

$$\text{National} - \text{NFIA} = \text{Domestic}$$

$$\text{Gross} - \text{depreciation} = \text{Net}$$

$$\text{Net} + \text{depreciation} = \text{Gross}$$

$$\text{MP} - \text{NIT} = \text{FC}$$

$$\text{FC} + \text{NIT} = \text{MP}$$

** NFIA : Net Factor Income from Abroad

= Factor income received from abroad – Factor Income paid to abroad

** NIT : Net Indirect Taxes

= Indirect Taxes – Subsidies

Methods of Measuring National Income:**(a) Value Added Method**

$$\text{GVA}_{\text{MP}} = \text{Value of Output} - \text{Intermediate cost}$$

Value of output = Sales + Change in stock

Change in stock = Closing stock – Opening Stock

****Intermediate Cost is the Non factor input cost**

(b) Income Method:

$$\text{NDP}_{\text{FC}} = \text{C} + \text{O} + \text{M}$$

C = Compensation of Employees

= Wages and salaries (in kinds and money)

+ Employer's contribution to Social Security Scheme

O = Operating Surplus

= Rent + Interest + Royalty + Profit

** Profit = Dividends + Corporation taxes + Retained earnings/saving of pvt. Corporate/ Undistributed Profit

M = Mixed Income of self employed

© Expenditure Method:

$$\text{GDP}_{\text{MP}} = \text{C} + \text{I} + \text{G} + (\text{X} - \text{M})$$

C = Pvt./Personal/Domestic final consumption expenditure

I = Gross Investment/ Gross Domestic Capital Formation

G = Govt. final consumption expenditure

X- M = Net Exports

= Exports – Imports

** Gross Capital Formation

= Gross fixed capital formation + change in stock/Inventory Investment

Steps for calculating National Income:**(a) Value Added Method:**

Step-1: Identify various sectors of the economy as Primary, secondary and tertiary

Step-2: Calculate GVA_{MP} in all sectors by

$$\text{GVA}_{\text{MP}} = \text{Sales} + \text{Change in Stock} - \text{Intermediate cost}$$

Step-3: Subtract the value of depreciation from GVA_{MP} and find NVA_{MP}

$$\text{NVA}_{\text{MP}} = \text{GVA}_{\text{MP}} - \text{Depreciation}$$

Step-4: Add the value of NFIA with NVA_{MP} and get NNP_{MP}

$$\text{NNP}_{\text{MP}} = \text{NVA}_{\text{MP}} + \text{NFIA}$$

Step-5 : Subtract the value of Net Indirect Taxes from NNP_{MP} and get NNP_{FC} or the National Income

$$\text{National Income/NNP}_{\text{FC}} = \text{NNP}_{\text{MP}} - \text{NIT}$$

Step-6: Add the National income of all sectors and find the National Income of the economy

(b) Income Method:

Step-1: Identify various sectors of the economy as Primary, secondary and tertiary

Step-2: Calculate NDP_{FC} in all sectors by

$$NDP_{FC} = \text{Compensation of Employees} + \text{Operating Surplus} + \text{MI}$$

Step-5 : Add the value of NFIA with NDP_{FC} and get the National Income

$$\text{National Income}/NNP_{FC} = NDP_{FC} + \text{NFIA}$$

Step-6: Add the National income of all sectors and find the National Income of the economy

© Expenditure Method:

Step-1: Identify various sectors of the economy as Primary, secondary and tertiary

Step-2: Calculate GDP_{MP} in all sectors by

$$GDP_{MP} = C + I + G + (X-M)$$

Step-3: Subtract the value of depreciation from GDP_{MP} and find NDP_{MP}

$$NDP_{MP} = GDP_{MP} - \text{Depreciation}$$

Step-4: Add the value of NFIA with NDP_{MP} and get NNP_{MP}

$$NNP_{MP} = NDP_{MP} + \text{NFIA}$$

Step-5 : Subtract the value of Net Indirect Taxes from NNP_{MP} and get NNP_{FC} or the National Income

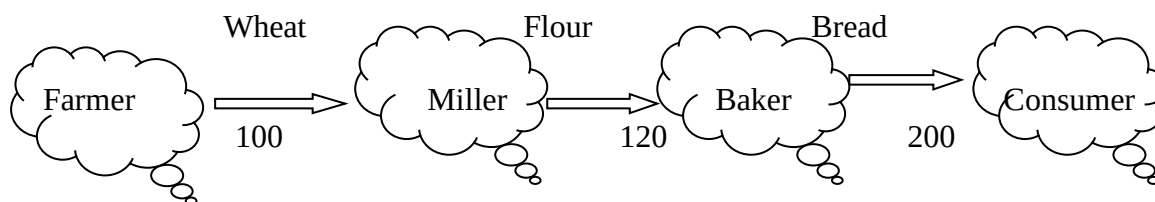
$$\text{National Income}/NNP_{FC} = NNP_{MP} - \text{NIT}$$

Step-6: Add the National income of all sectors and find the National Income of the economy

Concepts of value Added:

Value added refers to the less of value of intermediate cost from the Value of output produced.

This can be explained from the following example



Stages of Production	I	II	III	
Output	100		120	200
IC	0		100	120
Value Added	100		20	80

- Let a Farmer produce wheat with zero intermediate cost and sell it to the Miller with Rs. 100 , so it adds value of Rs. 100 (100-0)
- The Miller prepares flour from it and sell it to the Baker with Rs. 120 , so it adds value of Rs. 20 (120-100)

- The Baker prepares bread and sell it to the final consumer with Rs. 200 , so adds value of Rs. 80 (200 -120)
- The total value added in all stages of production is Rs. 200 (100 + 20 + 80) = Value of the final output
- Hence Value of Final output is the sum of value added in all stages of production

PROBLEM OF DOUBLE COUNTING:

Meaning:

Problem of double counting refers to adding the value of one output more than once while estimating National Income.

Problem: Due to this the National Income is over estimated

Methods of avoiding:

This can be avoided by two methods

(a) Final Output Method

- In this method only the value of final output are included
- The value of intermediate cost are not included
- In the above example the value of bread is only included as the value of wheat , flour are include in it

(b) Value Added Method:

- In this method the value added in various stages of production are taken in to account ting while estimating National Income instead of adding value of output in each stage
- The value of the final ,output is equal to the sum of the value added in various stages of production
- Value of Final Output = $\sum$ Value Added

Precautions while estimating National Income:

(i) Value Added Method

- Avoid double counting : Only value of final goods to be included and thje value of intermediate goods are to be excluded to avoid double counting
- Sale of Second hand goods not to be included : Sale of Second hand goods is not a production activity. Its value have already been included in the year it produced
- Self consumed output to be included; As these are produced through economic activities. (Self services not to be included)
- Change of stock to be included; As these are a part of capital formation
- Imputed value of own occupied house to be included : These have values in the market

(ii) Income Method:

- Transfer income to be avoided: As no economic activities are performed against it
- Capital gain to be avoided: These are not production transactions
- Financial Transactions are to be avoided : Financial transactions like sale of shares , bonds are not to be included as there is only change of title , no production activity
- Income from sale of second hand goods to be avoided: As its value are already included in the year in which it was produced and sold , But commission on sale of second hand goods to be included as it is a part of production activity
- Windfall gains are to be avoided : as there is no production activity
- Taxes not be included : As these are transfer income

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(iii) Expenditure Method:

- Avoid intermediate expenditure : It leads to double counting
- Avoid Transfer Expenditure
- Avoid expenditure on Sale of Second hand goods
- Expenditure on own account production to be included
- Purchase of financial assets like share and bonds not to be included

Real and Nominal GDP

Nominal GDP:

If the GDP is measured in terms of current market prices , then it is called Nominal GDP

Real GDP :

If the GDP is measured in terms of constant market prices , then it is called Real GDP

$$GDP\ Delator\ (or\ Price\ Index) = \frac{Nominal\ GDP}{Real\ GDP} \times 100$$

Advantages of Real GDP

- It is useful in finding out the effect of increased production of goods and services on the real development capacity of the economy in general
- It enables one to make a year to year comparison of the changes in the growth of output
- It is also used in making international comparisons of economic performance across the countries

GDP and Welfare:

Higher level of GDP of a country may be treated as an index of greater well being of the people of that country , but there are certain reasons why this may not be correct.

(a) Distribution of GDP

- If the GDP of a country is rising , the welfare may not rise as a consequence
- This is because the rise in GDP may be concentrated in the hands of very few individuals
- For the rest , the income may infact have fallen
- In such cases the welfare of the entire country cannot be said to have increased

(b) Non Monetary Exchange

- The value of non-monetary transactions like services of housewife , kitchen gardening are not included while calculating GDP due to non availability of data
- These have also certain values and which measures economic welfare
- By non-inclusion of these values in the estimation of GDP there is underestimation of GDP
- Hence GDP calculated in the standard manner may not give us a clear indication of the productive activity and well-being of the country

(c) Externalities:

- Externalities refers to the benefits (or harms) a firm or an individual causes to another for which they are not paid (or penalized) – benefits called positive externalities and harms called negative externalities
- Externalities do not have any market in which they can be bought and sold
- The value of externalities are not taken in to account while estimating national income
- Positive externalities under estimate the national income and negative externalities over estimate the national income

(d) Composition of GDP

- If GDP is composed of more socially undesirable goods like guns, bombs it will definitely over estimate the GDP in calculating welfare of the people.

